

What is claimed is:

1. A focus adjustment mechanism for a video or image pickup apparatus comprising:

5 a main frame;

a focus adjusting ring rotatably engaged with an annular lens seat, said lens seat protruding forward from a front surface of said main frame for supporting an image pickup lens;

10 an imaging element mount located inside said main frame so as to oppose to said focus adjusting ring for supporting an imaging element, said imaging element mount being shiftable in an optic-axial direction of said image pickup lens in response to rotational motion of said focus adjusting ring;

a pressing member for pressing said imaging element mount toward said focus adjusting ring;

15 a plurality of protrusions provided on an outer cylindrical portion of said imaging element mount;

a rail groove provided on an outer cylindrical portion of said focus adjusting ring, said rail groove extending in a circumferential direction of said focus adjusting ring;

20 a plurality of engaging protrusions provided on the front surface of said main frame around said lens seat and engaged with said rail groove of said focus adjusting ring; and

25 cam means provided on said focus adjusting ring so as to oppose to said imaging element mount and contact with said protrusions provided on said outer cylindrical portion of said imaging element mount, for increasing a distance between said imaging element mount and said focus adjusting ring against a pressing force of said pressing member when said focus adjusting ring rotates in one direction and for allowing said imaging element mount urged by the pressing force of said pressing member to approach toward said focus adjusting ring when

said focus adjusting ring rotates in an opposite direction.

2. The focus adjustment mechanism for a video or image pickup apparatus in accordance with claim 1, wherein

5           at least one ligulate member protrudes from the outer cylindrical portion of said imaging element mount and is slidable along a rod member provided on said main body when said imaging element mount slides, and

          said pressing member comprises at least one coil spring disposed around said rod member and at least one pressing plate spring detachably engaged with  
10       said main frame and holding said coil spring in a compressed condition so that the said imaging element mount is resiliently urged by said coil spring toward said focus adjusting ring.

3. The focus adjustment mechanism for a video or image pickup apparatus  
15       in accordance with claim 1, wherein

          a plurality of notched portions are formed on the outer cylindrical portion of said focus adjusting ring at predetermined intervals in the circumferential direction so as to be continuous with said rail groove,

          said engaging protrusions are slid into said rail groove via said notched  
20       portions and engaged with said rail groove,

          said focus adjusting ring has a stopper which hits against the protrusions of said imaging element mount so that rotation of said focus adjusting ring is restricted at a predetermined angular position when said focus adjusting ring rotates in said the opposite direction, and

25       said engaging protrusions are angularly offset from said notched portions when said focus adjusting ring is held at said predetermined angular position.

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Title of the Invention:

Lens Mount Switching Mechanism for a Television Camera

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Claim

1. A lens mount switching mechanism for a television camera, comprising:

- a lens seat;
  - a bracket supported shiftable in an axial direction relative to said lens seat;
  - an imaging element mounted on said bracket;
  - a pressing spring for resiliently urging said bracket and said imaging element toward said lens seat positioned in front of them;
  - a switching adjustment ring rotatably coupled around an outer cylindrical portion of said lens seat so as to be shiftable in the axial direction;
  - a protrusion protruding from an outer cylindrical surface of said lens seat;
- and

a cam surface provided on said switching adjustment ring and engaging with said protrusion when said switching adjustment ring rotates so as to shift said switching adjustment ring, said bracket, and said imaging element forward by an elastic force of said pressing spring or backward against the elastic force of said pressing spring, thereby adjusting said imaging element to a plurality of lenses each having a different flange back distance and realizing fine adjustment of each flange back distance.